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Data assimilation into a climatological model

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Abstract content
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This work reports on the progress of assimilating observational data into an empirical climatological model (International Reference Ionosphere, IRI 2012) to improve modelling/predictions. The basis is in adjusting the major input parameters of the climatological model to enable its predictions match the actual electron content measurements. The outputs including electron density profiles are compared with independent data sources (ionosonde, radio occultation). It is observed that a significant improvement is achieved by assimilating total electron content (TEC) data into the IRI especially over areas that were originally under-represented during the model's development

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